

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claims 1-8. (canceled)

9. (Currently amended) A recombinant enzyme ~~capable of that~~ hydrolyzing at least one organophosphate selected from the group consisting of carboxylester organophosphates and dimethyl-oxon organophosphates, ~~wherein the recombinant enzyme comprises an amino acid sequence which is at least about 75% identical to SEQ ID NO.8, wherein the recombinant enzyme comprises amino acid residues conserved between the sequences provided in Figure 4 with the exception that the recombinant enzyme comprises an amino acid selected from the group consisting of Leu, Ser, Ala, Ile, Val, Thr, Cys, Met and Gly at position 251, and wherein the recombinant enzyme is encoded by a polynucleotide sequence that hybridizes under high stringency conditions to the complement of SEQ ID NO:1, 3 or 5.~~

10. (Currently amended) A method of eliminating or reducing the concentration of organophosphate pesticide residues in a contaminated sample or substance in which the organophosphate is selected from the group consisting of carboxylester organophosphates and dimethyl-oxon organophosphates, the method comprising contacting the sample or substance with a recombinant enzyme according to claim 1 ~~comprising an amino acid sequence which is at least 60% identical to SEQ ID NO. 8, wherein the recombinant enzyme comprises amino acid residues conserved between the sequences provided in Figure 4 with the exception that the recombinant enzyme comprises an amino acid selected from the group consisting of Leu, Ser, Ala, Ile, Val, Thr, Cys, Met and Gly at position 251.~~

11. (Currently amended) A method of eliminating or reducing the concentration of organophosphate pesticide residues in a contaminated sample or substance in which the organophosphate is selected from the group consisting of carboxylester organophosphates and dimethyl-oxon organophosphates, the method comprising contacting the sample or substance with a cell transformed with a DNA molecule encoding a recombinant enzyme according to claim 1 ~~comprising an amino acid sequence which is at least 60% identical to SEQ ID NO. 8;~~ wherein ~~the recombinant enzyme comprises amino acid residues conserved between the sequences provided in Figure 4 with the exception that the recombinant enzyme comprises an amino acid selected from the group consisting of Leu, Ser, Ala, Ile, Val, Thr, Cys, Met and Gly at~~ position.

Claims 12-16 (Canceled)

17. (Previously presented) The recombinant enzyme according to claim 9, wherein said Trp at position 251 is substituted with Leu or Ser.

18. (Previously presented) A recombinant enzyme capable of hydrolyzing at least one organophosphate selected from the group consisting of carboxylester organophosphates and dimethyl-oxon organophosphates, wherein the recombinant enzyme has the amino acid sequence of SEQ ID NO.10 or the amino acid sequence of SEQ ID NO. 13 in which Trp at position 251 is replaced with Ser.

Claims 19-21 (Canceled)

22. (Original) The method according to claim 10, wherein said Trp at position 251 is substituted with Leu or Ser.

23. (Previously presented) A method of eliminating or reducing the concentration of organophosphate pesticide residues in a contaminated sample or substance in which the

organophosphate is selected from the group consisting of carboxylester organophosphates and dimethyl-oxon organophosphates, the method comprising contacting the sample or substance with a recombinant enzyme comprising the amino acid sequence of SEQ ID NO: 10 or SEQ ID NO: 13 in which Trp at position 251 is replaced with Ser.

24. (Original) The method according to claim 11, wherein said cell is a prokaryotic cell or an insect cell.

Claims 25-27 (Canceled).

28. (Original) The method according to claim 11, wherein said Trp at position 251 is substituted with Leu or Ser.

29. (Currently amended) A method of eliminating or reducing the concentration of organophosphate pesticide residues in a contaminated sample or substance in which the organophosphate is selected from the group consisting of carboxylester organophosphates and dimethyl-oxon organophosphates, the method comprising contacting the sample or substance with a cell transformed with a DNA molecule encoding a recombinant enzyme having ~~an~~the amino acid sequence ~~of as provided in~~ SEQ ID NO: 10 or the amino acid sequence ~~as provided in~~of SEQ ID NO: 13 in which Trp at position 251 is replaced with Ser.

Claim 30 (Canceled).